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Cardiac Fusion Imaging reveals Steal Phenomenon due to Giant Left Circumflex Artery Fistula to the Right Atrium

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Images in Cardiology

We report on a patient (47 years) presenting with exertional dyspnea and atypical chest pain since one month. Electrocardiogram documented atrial flutter and echocardiography revealed enlarged right cavities, reduced left ventricular function, and suspicion of a coronary fistula. Coronary angiography showed a dilated left main (LMA) and a faint contrast twirling through a giant left circumflex artery (LCX) (**A**, black arrow) draining into the coronary sinus. The right coronary artery (RCA) served peripheral collaterals to obtuse marginal LCX branches (**B**, black arrow). A panoramic view integrating stress ^{99m}Tc -tetrofosmin myocardial perfusion imaging and coronary computed tomography angiography confirmed a giant tortuous LCX (**C**) draining into the right atrium (**D**, black arrow) with a basal inferior ischemia secondary to coronary steal phenomena in the border zone between LCX and RCA territory (**E**). RCA revealed a motion artefact in the medial part due to atrial flutter. Hybrid cardiac imaging provides comprehensive functional and structural information as a solid ground for guiding patients' management.

Video Legends

Video 1: Cardiac fusion image from myocardial perfusion scintigraphy ^{99m}Tc -tetrofosmin, dobutamin stress and 64-slice coronary computed tomography angiography illustrates a giant tortuous left circumflex coronary artery draining into the right atrium and a basal inferior ischemia in the border zone between LCX and RCA territory due to steal phenomenon.

Video 2: Conventional Coronary angiography with contrast material injection into an enlarged left main artery: Visualization of the giant left circumflex artery (LCX) faint due to dilution of the twirling contrast material.

Video 3: Conventional coronary angiography of the right coronary system in the right anterior projection serving peripheral collaterals to the left circumflex artery (LCX) system.

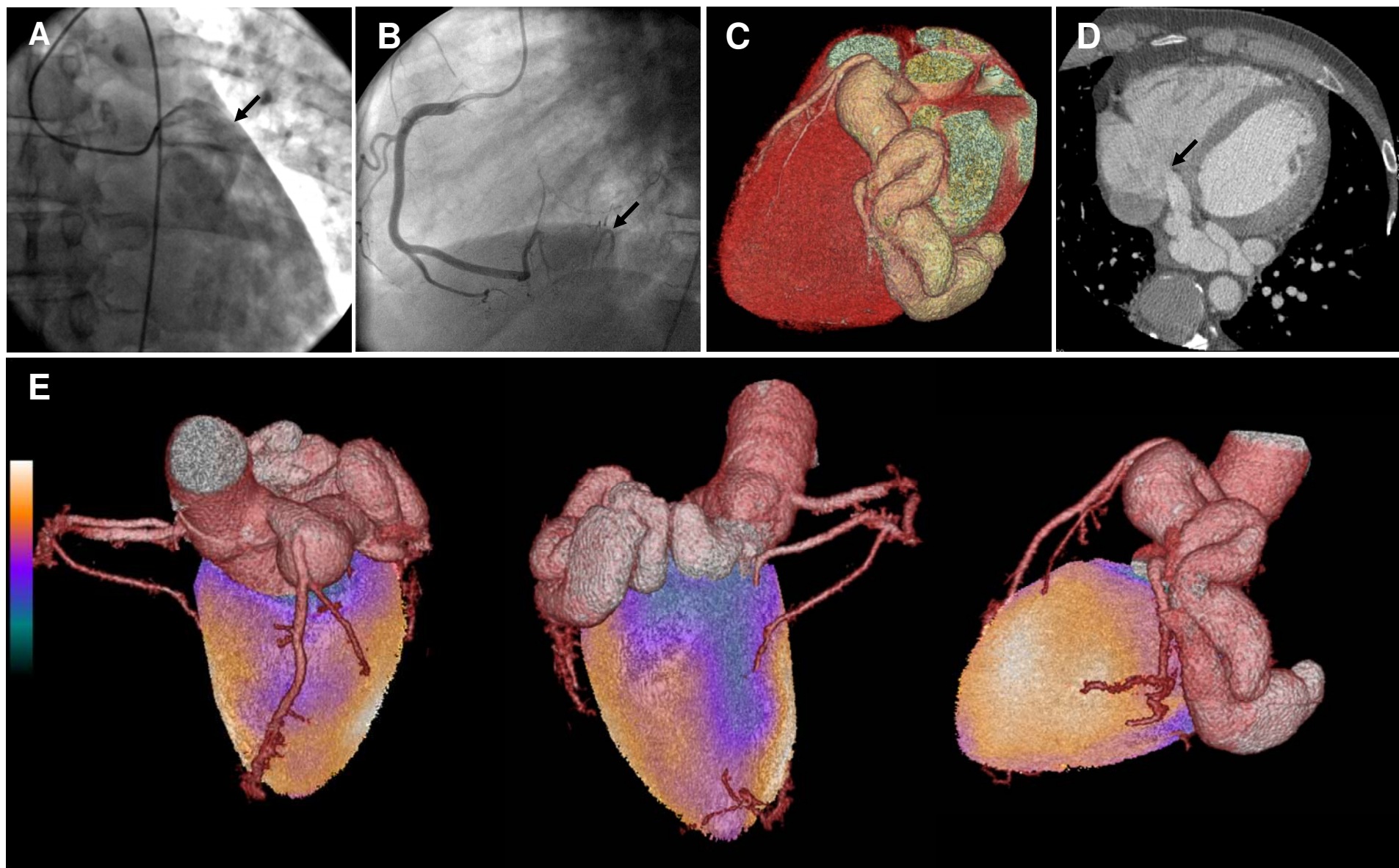


Figure 1